

Chorus Improves Coating System

Lens Manufacturing | Case Study

The Client

The Norville Group is a spectacle lens manufacturer in Gloucester with over 50 years' experience of using traditional surfacing techniques and introducing modern inner surface manufacturing designs. Norville's customers are opticians and laboratories in the UK and across Europe. As well as working with leading conventional lens brands, Norville supplies specialist lens products, from Vista Mesh lenses for night driving and to people who suffer with migraine to ReadEZ tinted lenses for Meares Irlen Syndrome and E-Scoop spectacle loupe lenses aimed at AMD sufferers.

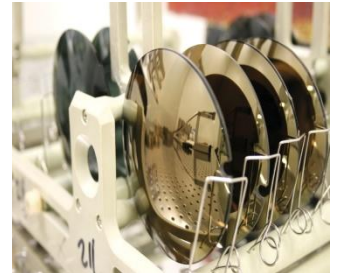


Key Figures

- 50 l/day Type III water
- Improved process performance
- Cost savings of £10,000 pa

The Client's Needs

Norville provides a comprehensive high-tech coating service, specialising in multi anti-reflection thin coats, as well as hydrophobic (anti-fog) and mirror coating, using the very latest equipment available. The conditions under which these microscopically thin multilayer coatings are applied must be carefully controlled to ensure consistent optical properties.



The coating process, which involves chemical etching, coating at controlled temperature and ultrasonic cleaning, uses approximately 50 litres of water per day. Norville had been using the local hard mains water, which resulted in process problems, including the scaling of chillers and heaters, which necessitated replacement at three monthly intervals. Production Manager Steve Evans approached Veolia.

The Solution

To meet Norville's needs, Veolia Water Technologies provided a PURELAB Chorus 3 water purification system together with a 30 litre treated water reservoir. The PURELAB Chorus 3 is a compact water purification unit producing 10 litres per hour of Type III water. Although this is a standard arrangement for the Chorus, in this application, some additional engineering was required because the 30 litre reservoir is installed at mezzanine level so that purified water can be supplied to the equipment under gravity head. This required a booster pump to provide the additional pressure needed together with controls to ensure that the reservoir would remain full.

Process Description

The Chorus 3 uses advanced reverse osmosis technology to remove 90% of dissolved solids and 99% of organics and particulate solids from the feed water to produce Type 3 water – that is $<20\mu\text{S}/\text{cm}$ conductivity and $<200\mu\text{g}/\text{l}$ TOC.

Results

Using Type III water instead of the mains supply has improved the efficiency of the coating process and has eliminated the scaling problem in the heater units. The associated annual cost savings are estimated, to be between £8,000 - £10,000.



Veolia Water Technologies

Windsor Court, Kingsmead Business Park,
High Wycombe, Buckinghamshire HP11 1JU
Tel: + 44 (0) 1628 897000

www.veoliawatertechnologies.co.uk